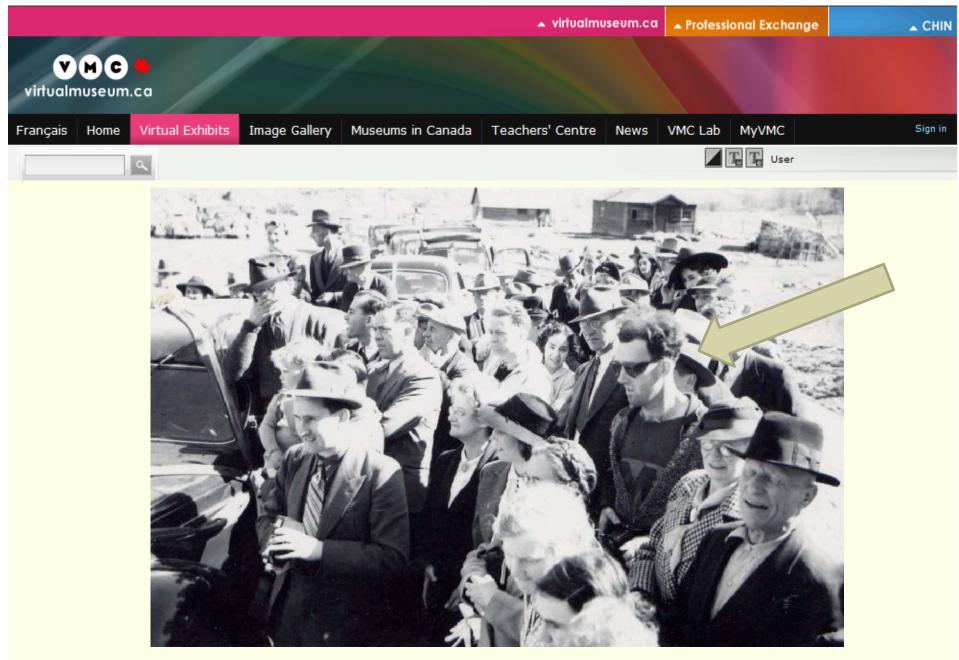


## History and technology: What are the implications?



Stéphane Lévesque Université d'Ottawa info@virtualhistorian.ca



"Reopening of the South Fork Bridge after flood in Nov. 1940. 1941

# The Virtual Historian

"I enjoyed using the Virtual Historian. I thought it was an interesting, new way to learn history." Etudiant de niveau secondaire Toronto

#### THINKING→ ←HISTORICALLY

Educating Students for the Twenty-First Century

STÉPHANE LÉVESQUE

In my book, I have argued that teaching students to think historically is a long and arduous process that is likely to put educators at odd with memory-history, rigid curriculum expectations, content standards, and sometimes students themselves... Some teachers are better positioned and equipped for the challenges of the 21<sup>st</sup> century than others.

Luc Guay (2009) observes, To teach is to make students learn, knowing that the students are responsible for their own learning, and this requires that we adapt our teaching practices so as to take in to consideration the relationship between learners and knowledge].

## **Digital natives:**

Today's students have not just changed *incrementally* from those of the past, nor simply changed their slang, clothes, body adornments, or styles, as has happened between generations previously. A really big *discontinuity* has taken place. One might even call it a "singularity" – an event which changes things so fundamentally that there is absolutely no going back. This so-called "singularity" is the arrival and rapid dissemination of digital technology in the transformed and the second sec rapid dissemination of digital technology in the last decades of the 20th century. ©2001 Marc Prensky

the Cardie Hardon (MCB University Press, Vol. 9 No. 5, Octor C 2007 Marc Pressly

It is amazing to use how in all the hoopla and debate these days about the decline of acturation in the US we isnore the most fundamental of its causes. Our saudence have It is amazing to use how in all the hoopla and debute these days about the decime of education in the US we ignore the most fundamental of its causes. Our students do changed radically. Todays's students are no longer the people our educational system

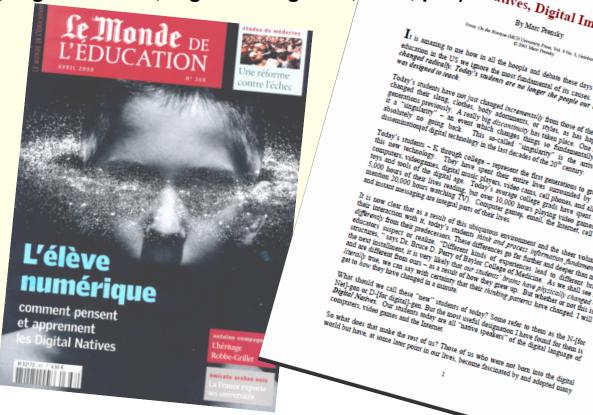
Today's students have not just changed incrementally from those of the past, nor single changed their slang. Cothes, body adomments, or styles, as has been as the single change of the structure with disconting or styles, as has been as the single change of the structure of the 's students have not just changed incrementaly's from those of the past, nor simply ed their slang, clothes, body adornments, or styles, as has happened between

Today's students - K through college - negresent the first generations to grow up with this new technology. They have speer their entries surrounded by and using only and tools of the digital guardic players, view college liphones, and all housing surrounded boards of the digital guardic players, to war 10.000 hours playing video games down and instant messaging are integral parts of their lives.

i how clear that as a result of this ubiquitous environment and the she interaction with it. today's students shink and process information i It is now clear that as a result of this ubiquitous environment and their interaction with it, today's students disk and process inform differences on their tradecessore. These differences on for furthers

inerary use, we can say with certainly in Set to how they have changed in a minute.

their interaction with it. loday's students shink and process information fundamental differency from their predecessors. These differences so far further and deeper than most educators suspect or realize. "Different kinds of experiences lead to different ban differently from their predecessors. These differences go far further and deeper than educators suspect or realize "Different kinds of experiences lead to different band to be next installment, it is very likely that our students' brains have physically changed structures, "says Dr. Bruce D. Perry of Baylor College of Medicine. As we shall see the news installment, it is very likely that our students." Arous have physically changed and are different from ours - as a result of how they green up. But whether or nor this iterally true, we can say with certainty that their shinking patterns have changed i will and are different from ours is a result of how they grew up. But whether or not due is it it was to how they have changed in a minute.



# <u>Postulate 1</u> : A distinct generation of "digital natives" now exists and populates our schools.

For many, digital natives born out of the internet revolution of the early 1990s live their lives completely immersed in technology and are "fluent in the digital language of computers, video games and the Internet" (Prensky, 2005b, p. 8).

### Stats Canada:

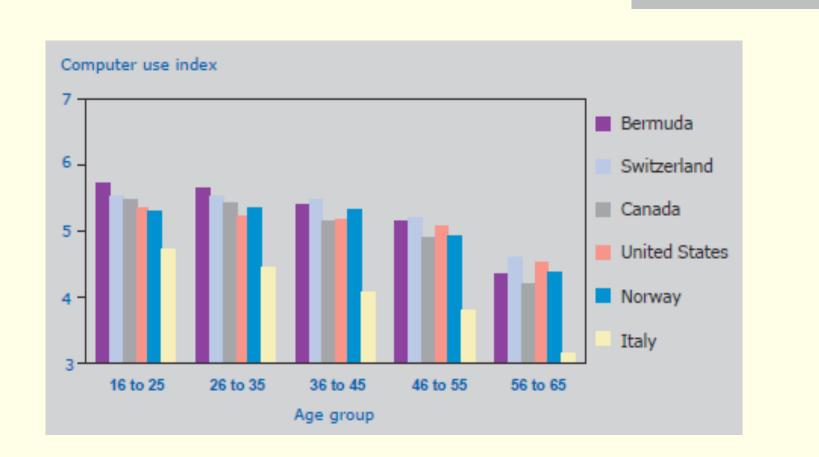
Young computer users are an interesting focal point because in many ways they represent a group of people with a different outlook on technology. While at different points in time, much of the older population adopted ICTs such as the computer and the Internet and learned to adapt their lives to the use of these technologies, the younger generation has grown up at a time when these technologies were already pervasive. The types of computer and Internet activities performed by the younger generation are particularly distinct from the uses of middle-aged and older individuals. (Veenhof, Clermont et Sciadas, 2007, p. ).

Table 1 : Time spent on computers at home in a typical month, by age group, Canada, 2003

	Less than 10 hours	10 to less than 30 hours	30 to less than 60 hours	60 hours or more				
Age group	% of computer users							
16 to 25	27.3	29.4	25.1	18.1				
26 to 35	39.0	29.1	19.1	12.8				
36 to 45	48.3	29.1	12.7	9.9				
46 to 55	47.8	31.6	12.9	7.7				
56 to 65	48.1	25.9	15.7	10.3				
Source: St	atistics Canada	Adult Literacy a	and Life Skille Su	IN/01/ 2003				

**Source:** Statistics Canada, Adult Literacy and Life Skills Survey, 2003.

## Graph 1 : Use of computers for task-oriented purposes by age group, by country, 2003



# Table 2 : Purposes of computer use in a typical month, by age group,Canada, 2003

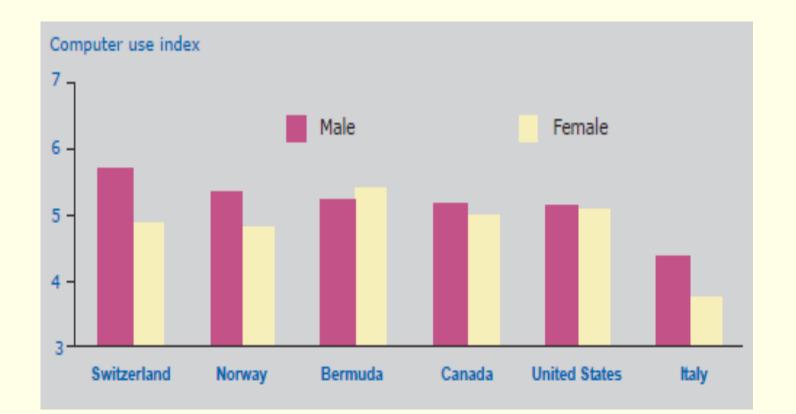
						Ration
	16 to 25	26 to 35	36 to 45 % of computers	46 to 55	56 to 65	
Use of Internet	97.9	94.1	91.2	87.4	78.5	1,2
Writing or editing text	84.8	79.5	72.9	71.0	62.4	1,4
Playing games	68.3	52.7	45.7	41.0	44.5	1,5
Reading information on a CD-ROM or DVD	65.2	63.2	60.6	54.3	41.9	1,6
Creating graphics, designs, pictures or presentations	52.2	47.4	42.4	37.8	24.5	2,1
Accounts, spreadsheets or statistical analysis	40.6	56.1	53.0	50.5	39.2	1,0
Keeping a schedule or calendar	29.1	48.4	43.2	39.1	27.5	1,1
Programming or writing computer code	17.3	14.2	12.3	8.8	5.3	3,3
So	urce: Statistics	Canada Adult Li	teracy and Life Skil	ls Survey 2003		

Source: Statistics Canada, Adult Literacy and Life Skills Survey, 2003.

# Table : Use of computer and internet by college students (USA) (ECAR, 2008)

	Students Engaged (N = 27,317)	Median Frequency of Use*	Associated Demographic Factors
Almost All Students Engaged			
Use the college/university library website	93.4%	Weekly	4-year institutions/ social sciences
Presentation software (PowerPoint, etc.)	91.9%	Monthly	4-year institutions/ seniors
Most Students Engaged			
Spreadsheets (Excel, etc.)	85.9%	Monthly	Seniors/business/ engineering
Social networking websites (Facebook, MySpace, Bebo, LinkedIn, etc.)	85.2%	Daily	Age (younger)/reside on campus
Text message	83.6%	Daily	Age (younger)
Course management system	82.3%	Several times/ week	4-year institutions
Download web-based music or videos	77.3%	Weekly	Male/age (younger)
Graphics software (Photoshop, Flash, etc.)	73.9%	Monthly	Fine arts
Instant message	73.8%	Several times/ week	Age (younger)/reside on campus
Some Students Engaged			
Contribute content to photo or video websites (Flickr, YouTube, etc.)	46.6%	Monthly	-
Contribute content to wikis (Wikipedia, course wiki, etc.)	38.2%	Monthly	-
Contribute content to blogs	34.1%	Monthly	-
Video-creation software (Director, iMovie, etc.)	32.9%	Once per quarter/ semester	Male
Audio-creation software (Audible, GarageBand, etc.)	32.5%	Once per quarter/ semester	Male
Use the Internet from a cell phone or PDA	30.8%	Weekly	-
Online multiuser computer games ( <i>World of Warcraft, EverQuest,</i> poker, etc.)	29.4%	Monthly	Male
Podcasts	29.1%	Monthly	Male
Webcasts	25.0%	Monthly	Male
Social bookmark/tagging (del.icio.us, etc.)	16.7%	Monthly	_
Online virtual worlds (Second Life, etc.)	8.8%	Once per quarter/ semester	-

## Graph 2 : Use of computers for task-oriented purposes by gender, by country, 2003

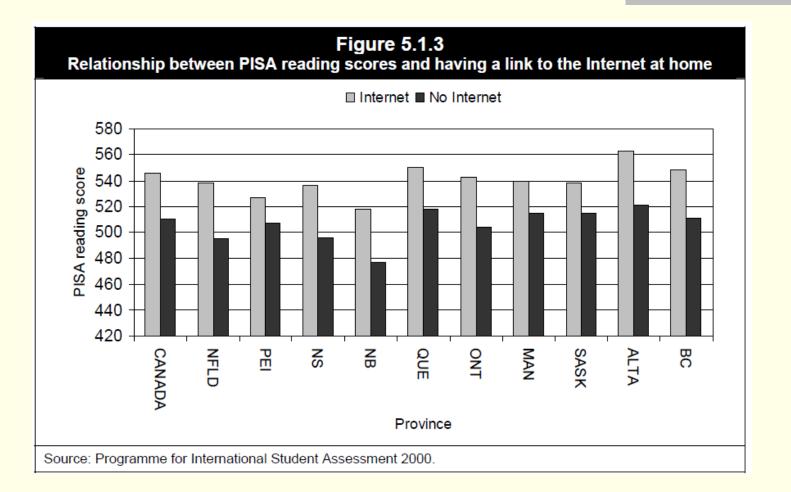


## <u>Postulat 2</u> : Digital natives have particular learning preferences or styles that differ from earlier generations.

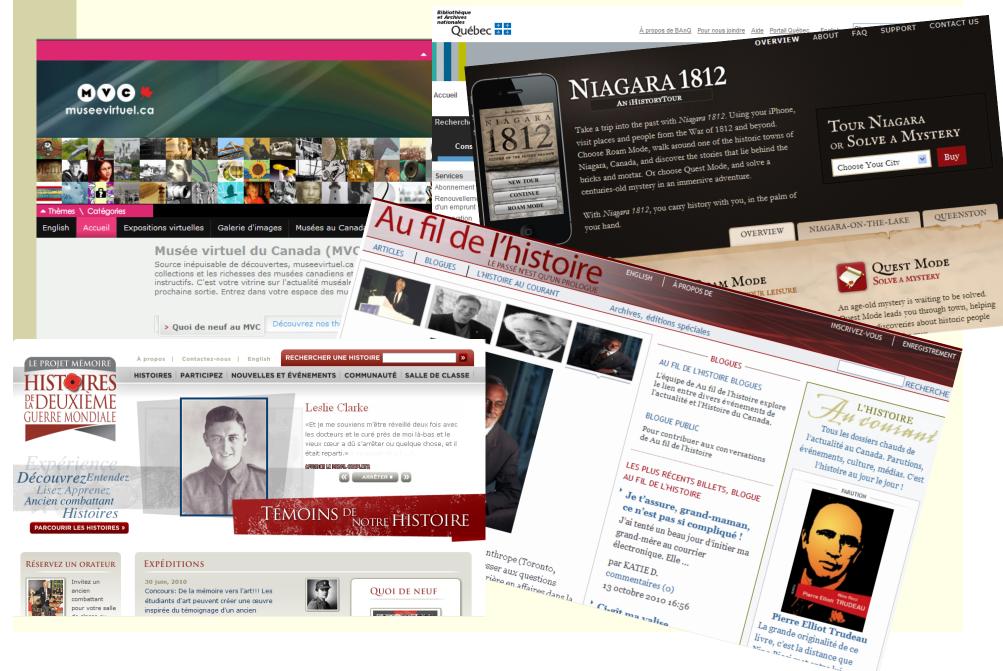
The second claim suggests that the immersion of young people in the technological world leads them to *"think and process information fundamentally differently* from their predecessors" (Prensky, 2001a, p. 1, emphasis in the original).

John Seely Brown (2000), former Chief Scientist of Xerox Corporation, contends "today's kids are always "multiprocessing" they do several things simultaneously—listen to music, talk on the cell phone, and use the computer, all at the same time' (p. 13).

# **<u>Postulate 2</u>** : Digital natives have particular learning preferences or styles that differ from earlier generations.



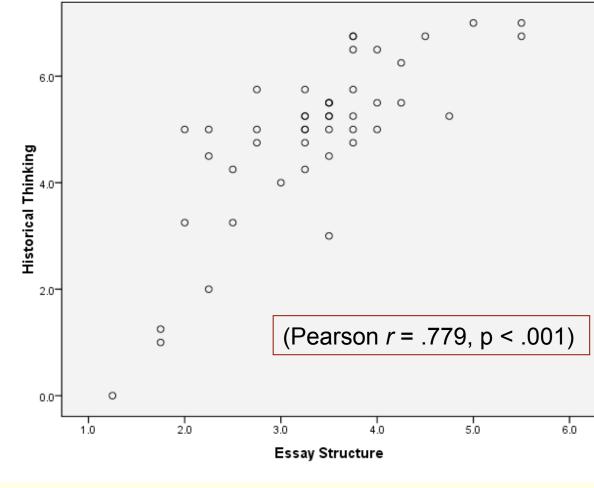
### Field of history in Canada since the Digital revolution



## The Virtual Historian

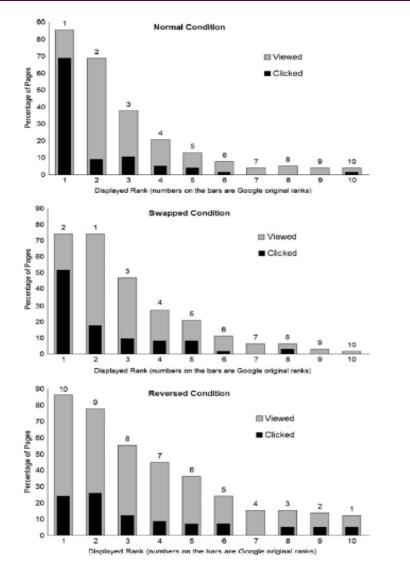
Table

Correlations (Dieppe, Ontario school board 1)

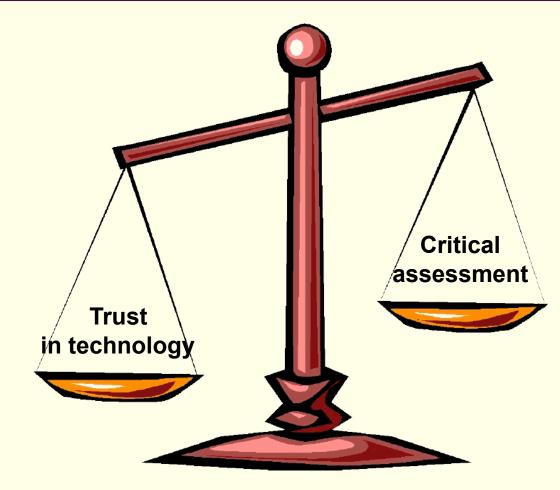


\*\* Correlation is significant at the 0.01 level (2-tailed).

Pan et al. (2007) observes that "college student subjects are heavily influenced by the order in which the results are presented and, to a lesser extent, the actual relevance of the abstracts. These subjects trust Google in that they click on abstracts in higher positions even when the abstracts are less relevant to the task (p. 816). « In Google We Trust. » JCMC



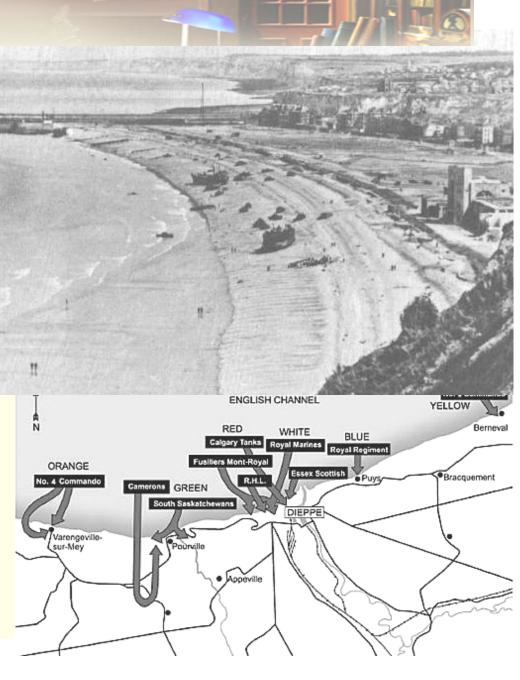
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## The Virtual Historian







## How to read a visual text in history...



National Archives of Canada William Lyon Mackenzie King Collection C-014160 (From captured German film files)

# How to read visuals...

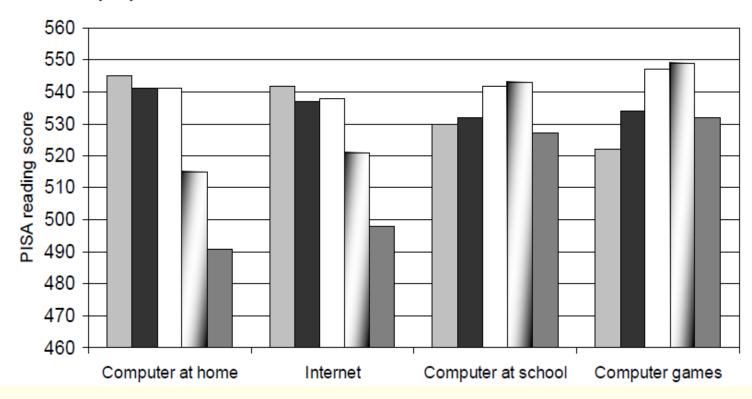
What is this? Why is this Churchill tank stuck?



Who are these soldiers? Why are they lying dead just after landing on the beach?

Figure 5.2.1

Relationship between PISA reading scores and frequency of usage of: computers at home, Internet, computer at school and computer games



Every day Few times a week 1-4 times a week Less than once a month Never

(HRSDC, 2004)

## **<u>Postulate 3</u>**: The current educational systems must change in response to a new generation of technically adept young people

- The claim that digital natives have a different relationship to knowledge implies the retooling of the current school system based on the 19th century Industrial Revolution model.
- Current students have been variously described as disappointed (Oblinger, 2003), dissatisfied (Levin & Arafeh, 2002) and disengaged (Prensky, 2005a). There is, from this perspective, an urgent need to change what is taught and how (Prensky, 2001a; Tapscott, 1998).
- Prensky argues that "We need to invent Digital Native methodologies for all subjects, at all levels, using our students to guide us" (p. 6).
- In the same way, Tapscott (1999) urges educators and authorities to '[g]ive students the tools, and they will be the single most important source of guidance on how to make their schools relevant and effective places to learn' (p. 11).

#### **Teachers and ICT in the classroom:**

Factors playing against integration:

limited skills to operate and use ICT in the context of the classroom, limited access to modern and relevant equipment, preparation time and workload issues, overemphasis on traditional content (textbooks) over digital resources (ebooks), provincial examinations and school regulations, and lack of direction and strategic planning within the school system.

#### **Teachers and ICT in the classroom:**

Digital natives and the "foreign" past

VH program favours computer engagement and focuses students attention. But many students appear disoriented when using the VH library and faced the "messiness" of the past. Unlike classroom textbooks, sources do not form a coherent story to be read and remembered.

Students' familiarity with technology does not automatically turn them into disciplinary experts.

"I found your program pretty boring. I would have preferred to have teacher lecture me on it or read it in the text-book "(TOE-024)

A majority of students (60%), in both school boards, prefer classroom learning and computer-teacher interaction to computer learning alone.

"Over and over, I heard the same refrain from the students, which was 'why can't you just tell us?'. Many students found the number of sources to read, and the amount needed to read confusing and intimidating. I think that the final task they were assigned – which was a research project resulting in an argumentative essay – required either much more teacher direction than the study allowed or much more concrete direction on what to do with each source." (Toronto VH teacher)

### Conclusion

- First, technology is here to stay...
- Second, we know very little with regard digital natives' mode of thinking and ways of processing information.
- Finally, what place should ICT occupy in the school system? The needs of the schools